

Science Grade 4
Instructional and Assessment Guidance 2012-13

Symbol	Content Priority	Possible ISTEP+ Test Questions
✓+	Critical Content	Yes
✓	Important Content	Yes
☐	Additional Content	No

Standard 1 Physical Science		Standard 2 Earth Science		Standard 3 Life Science		Standard 4 Science, Engineering and Technology		Standard 5 The Nature of Science		Standard 6 The Design Process	
3.1.1	✓+	3.2.1	✓	3.3.1	✓+	3.4.1	✓+	4.5.1	✓+	4.6.1	✓+
3.1.2	✓+	3.2.2	✓	3.3.2	✓+	3.4.2	✓+	4.5.2	✓+	4.6.2	☐
3.1.3	✓	3.2.3	✓+	4.3.1	✓+	4.4.1	✓+	4.5.3	✓+	4.6.3	✓
3.1.4	✓+	3.2.4	✓+	4.3.2	✓	4.4.2	✓	4.5.4	✓+	4.6.4	✓
3.1.5	✓+	3.2.5	✓	4.3.3	✓	4.4.3	✓	4.5.5	✓+	4.6.5	✓
3.1.6	✓	3.2.6	✓	4.3.4	✓	4.4.4	☐	4.5.6	✓	4.6.6	☐
4.1.1	✓	4.2.1	✓+					4.5.7	✓+	4.6.7	✓
4.1.2	✓	4.2.2	✓+					4.5.8	✓+	4.6.8	✓
4.1.3	✓+	4.2.3	✓					4.5.9	✓	4.6.9	✓
4.1.4	✓	4.2.4	✓							4.6.10	☐
4.1.5	✓+	4.2.5	✓							4.6.11	☐
		4.2.6	✓+								

Note: For the Spring 2013 ISTEP+ Science Applied Skills Assessment, teachers should focus on Standards 1, 2, 4 and 5.

Note: *The Nature of Science and the Design Process standards can be found at the front of the standards documents. The number designations of each are included below for clarification.*

The Nature of Science

- 4.5.1: Make predictions and formulate testable questions.
- 4.5.2: Design a fair test.
- 4.5.3: Plan and carry out investigations—often over a period of several lessons—as a class, in small groups or independently.
- 4.5.4: Perform investigations using appropriate tools and technologies that will extend the senses.
- 4.5.5: Use measurement skills and apply appropriate units when collecting data.
- 4.5.6: Test predictions with multiple trials.
- 4.5.7: Keep accurate records in a notebook during investigations and communicate findings to others using graphs, charts, maps and models through oral and written reports.
- 4.5.8: Identify simple patterns in data and propose explanations to account for the patterns.
- 4.5.9: Compare the results of an investigation with the prediction.

The Design Process

- 4.6.1: Identify a need or problem to be solved.
- 4.6.2: Brainstorm potential solutions.
- 4.6.3: Document the design throughout the entire design process.
- 4.6.4: Select a solution to the need or problem.
- 4.6.5: Select the most appropriate materials to develop a solution that will meet the need.
- 4.6.6: Create the solution through a prototype.
- 4.6.7: Test and evaluate how well the solution meets the goal.
- 4.6.8: Evaluate and test the design using measurement.
- 4.6.9: Present evidence by using mathematical representations (e.g, graphs, data tables).
- 4.6.10: Communicate the solution (including evidence) using mathematical representations (graphs, data tables), drawings or prototypes.
- 4.6.11: Communicate how to improve the solution.

Science Grade 6
Instructional and Assessment Guidance 2012-13

Symbol	Content Priority	Possible ISTEP+ Test Questions
✓+	Critical Content	Yes
✓	Important Content	Yes
☐	Additional Content	No

Standard 1 Physical Science		Standard 2 Earth Science		Standard 3 Life Science		Standard 4 Science, Engineering and Technology		Standard 5 The Nature of Science				Standard 6 The Design Process	
5.1.1	✓+	5.2.1	✓+	5.3.1	✓	5.4.1	✓	5.5.1	☐	6.5.1	✓	5.6.1	☐
5.1.2	✓	5.2.2	✓+	5.3.2	✓	5.4.2	✓	5.5.2	✓	6.5.2	☐	5.6.2	✓+
5.1.3	✓	5.2.3	✓+	6.3.1	✓+	5.4.3	☐	5.5.3	✓+	6.5.3	✓+	6.6.1	✓+
5.1.4	☐	5.2.4	✓+	6.3.2	✓	6.4.1	☐	5.5.4	✓	6.5.4	✓	6.6.2	☐
6.1.1	☐	6.2.1	✓+	6.3.3	✓	6.4.2	✓	5.5.5	✓	6.5.5	✓	6.6.3	☐
6.1.2	✓	6.2.2	✓+	6.3.4	✓+	6.4.3	☐	5.5.6	☐	6.5.6	☐	6.6.4	✓
6.1.3	✓	6.2.3	✓	6.3.5	✓+					6.5.7	✓	6.6.5	✓
6.1.4	✓+	6.2.4	✓+	6.3.6	✓					6.5.8	✓	6.6.6	✓
6.1.5	✓	6.2.5	✓+							6.5.9	✓	6.6.7	☐
6.1.6	✓+									6.5.10	☐	6.6.8	☐
6.1.7	✓											6.6.9	✓
												6.6.10	✓+
												6.6.11	✓
												6.6.12	☐

Note: For the Spring 2013 ISTEP+ Science Applied Skills Assessment, teachers should focus on Standards 1, 2, 3 and 5.

Note: *The Nature of Science and the Design Process standards can be found at the front of the standards documents. The number designations of each are included below for clarification.*

The Nature of Science

5.5.1: Make predictions and formulate testable questions.

5.5.2: Design a fair test.

5.5.3: Perform investigations using appropriate tools and technologies that will extend the senses.

5.5.4: Use measurement skills and apply appropriate units when collecting data.

5.5.5: Keep accurate records in a notebook during investigations and communicate findings to others using graphs, charts, maps and models through oral and written reports.

5.5.6: Identify simple patterns in data and purpose explanations to account for the patterns.

6.5.1: Make predictions and develop testable questions based on research and prior knowledge.

6.5.2: Plan and carry out investigations—often over a period of several lessons—as a class, in small groups or independently.

6.5.3: Incorporate variables that can be changed, measured or controlled.

6.5.4: Use the principles of accuracy and precision when making measurements.

6.5.5: Test predictions with multiple trials.

6.5.6: Keep accurate records in a notebook during investigations.

6.5.7: Analyze data, using appropriate mathematical manipulation as required, and use it to identify patterns. Make inferences based on these patterns.

6.5.8: Evaluate possible causes for differing results (i.e., valid data).

6.5.9: Compare the results of an investigation with the prediction.

6.5.10: Communicate the findings through oral and written reports by using graphs, charts, maps and models.

The Design Process

5.6.1: Evaluate and test the design using measurement.

5.6.2: Communicate how to improve the solution.

6.6.1: Identify a need or problem to be solved.

6.6.2: Brainstorm potential solutions.

6.6.3: Document the design throughout the entire design process.

6.6.4: Throughout the entire design process, document the design with drawings (including labels) in a portfolio or notebook so that the process can be replicated.

6.6.5: Select a solution to the need or problem.

6.6.6: Select the most appropriate materials to develop a solution that will meet the need.

6.6.7: Create the solution through a prototype.

6.6.8: Test and evaluate how well the solution meets the goal.

6.6.9: Evaluate and test the design.

6.6.10: Present evidence by using mathematical representations (e.g., graphs, data tables).

6.6.11: Communicate the solution (including evidence) using mathematical representations (graphs, data tables), drawings or prototypes.

6.6.12: Redesign to improve the solution based on how well the solution meets the need.